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INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference METSO 23 PCT/H1	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/FI 03/00588	International filing date (day/month/year) 01.08.2003	Priority date (day/month/year) 02.08.2002
International Patent Classification (IPC) or both national classification and IPC D21G1/00		
Applicant METSO PAPER, INC. et al.		



- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 4 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

 These annexes consist of a total of 1 sheets.

- This report contains indications relating to the following items:

- | | | |
|------|-------------------------------------|--|
| I | <input checked="" type="checkbox"/> | Basis of the opinion |
| II | <input type="checkbox"/> | Priority |
| III | <input type="checkbox"/> | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| IV | <input type="checkbox"/> | Lack of unity of invention |
| V | <input checked="" type="checkbox"/> | Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| VI | <input type="checkbox"/> | Certain documents cited |
| VII | <input type="checkbox"/> | Certain defects in the international application |
| VIII | <input type="checkbox"/> | Certain observations on the international application |

Date of submission of the demand 25.02.2004	Date of completion of this report 27.09.2004
Name and mailing address of the International preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Helpiö, T. Telephone No. +49 89 2399-7495 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/FI 03/00588

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-7 as originally filed

Claims, Numbers

1-5 filed with telefax on 05.08.2004

Drawings, Sheets

1/1 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: English , which is:

- ☒ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/FI 03/00588**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-5
	No: Claims	
Inventive step (IS)	Yes: Claims	1-5
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-5
	No: Claims	

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/FI 03/00588

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

- 1 Reference is made to the following document:
D1: WO 01/27389 A (PALONEN SEPPO ; VALMET CORP (FI); KAARAKKA HEIKKI (FI); KESKINEN ES) 19 April 2001 (2001-04-19)
- 2 The document D1 is regarded as being the closest prior-art to the subject-matter of claim 1, and discloses (cf. especially page 8, line 21 - page 9, line 12; figure 4) a calender according to the preamble of claim 1.

The subject-matter of claim 1 therefore differs from this known calender in that:

"said pairs of rolls are stairwise offset staggered on a frame so as to locate the rolls at different height levels".

The problem to be solved by the present invention may therefore be regarded as providing a calender with at least two roll pairs allowing an uncomplicated roll change while keeping the calender footprint small.

In the calender according to D1 (see fig. 4) the two roll pairs may be located at different height levels. The roll pairs are, however, mounted on two separate frames, and therefore this arrangement requires more floor space than the arrangement according to the present invention. There is no hint in D1, or in any other prior-art document cited in the International search report, which would lead the skilled person, in order to solve the above mentioned problem, to modify the calender according to D1 and thereby arrive at the subject-matter of claim 1. Therefore, claim 1 appears to satisfy the requirements of Article 33 PCT with regard to novelty and inventive step.

- 3 Dependent claims 2-5 add further features to the independent claim 1 and as such they also meet the requirements of the PCT with respect to novelty and inventive step.

What is claimed is:

1. A calender comprising

- 5 - at least two roll pairs formed by at least two rolls (8, 9; 14, 15) pairwise stacked above one another and so disposed mutually in regard to each other that in the successive pairs of rolls the distance between the center axes of the lower rolls (8, 14) of the roll pairs is smaller than the distance between the center axes of the respective upper rolls (9, 15), whereby the rolls (8, 9; 14, 15) as seen from their ends are staggered in a V-angled configuration so as to leave space therebetween for changing the rolls,
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characterized in that

- 15 - said pairs of rolls (8, 9; 14, 15) are stairwise offset staggered on a frame (5) so as to locate the rolls at different height levels.

2. The calender of claim 1, characterized in that each roll pair of a calender nip comprises at least one soft roll (9, 14) and at least one heated hard roll (8, 15).

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3. The calender of claim 1 or 2, characterized in that the upper roll pair (14, 15) is entirely situated above the lower roll pair (8, 9).

4. The calender of claim 1 or 2, characterized in that at least the lower roll (14) of the upper roll pair (14, 15) is situated at least partially below the top level of the upper roll (9) of the lower roll pair (8, 9).

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5. The calender of any one of foregoing claims, characterized in that immediately upstream in front of at least one pair of rolls (8, 9 or 14, 15) is adapted a moisturizing/steaming device (11, 17).

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